

Midwest Forensics Resource Center

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News

MFRC Annual Meeting:

We are developing plans for the 2013 MFRC Annual Meeting and the Midwest Crime Laboratory Directors meeting. The Annual meeting will be hosted by Mark Mayes and Laura Sudkamp of the Kentucky State Police Forensic Lab. We will plan to hold the meetings at a location in Kentucky; the venue, city, and date are currently being selected.

If you have any questions about the annual meeting, please contact Melinda Schlosser at 515-296-6372 or via email at mschlosser@ameslab.gov.

If you are interested in the document, it is available on the MFRC training website, under the download link. The MFRC training website is: <http://www.ameslab.gov/mfrc/training>.



MFRC Training and Professional Development Program Summary:

The MFRC published a brief history of the forensic science training programs. This document provides a ten year picture of the seventy-three forensic science training classes the MFRC has sponsored. One section of the document is a chronological list of classes and yearly progress while the other contains sample course outlines.

Education:

If you have input or suggestions for educational efforts, please contact Todd Zdorkowski at 515-294-5640 or zdorkowski@ameslab.gov.

Casework Assistance

The MFRC currently receives a constant level of requests for referrals for services. We welcome these inquiries, as well as any requests for other types of consultation or analyses. In addition to providing referrals to existing services, this program is designed to provide free access to new expertise and instrumentation.

If you would like more information, or to discuss the casework assistance program, please let us know. We would be happy to discuss the program, answer any questions you may have,

and walk through the process with you. Stan Bajic, the Casework Assistance Coordinator, can be reached at 515-294-2086 or via email at sbajic@ameslab.gov.



Casework Assistance by the MFRC

Training

Training during the last quarter:

Best Practices in Forensic Science Management

This class took place September 11-13, 2012 in Omaha, Nebraska. It attracted twenty-five participants from fourteen states and twenty-three forensic labs.

The participants came from civilian and sworn organizations, such as state laboratories, large-city police departments, metro-area sheriff's offices, and smaller community law enforcement laboratory units. The class included laboratory directors, multi-section managers, unit heads, group leaders, and senior bench scientists.

The management series was intended for those considering the transition from analyst to manager, those who are making the transition, or those who are new to crime laboratory management. The instructors for the class were Dr. Anthony Hendrickson and Laura Mizaur. Dr. Hendrickson is the Dean of the College of Business at Creighton University where he is also Professor of Information Systems Management. Laura Mizaur is a licensed CPA, who teaches courses in Accounting, Management, and Innovation in the College of Business Administration at Creighton University. Dr. Hendrickson developed the class for the MFRC on the basis of laboratory director requests and input.



Participants at the Best Practices in Forensic Science Management class held September 11-13, 2012.



Participants at the Best Practices in Forensic Science Management class held September 11-13, 2012.

ISU and the Minnesota BCA are developing an expert system for evidence submission.

In collaboration with Iowa State University and the Minnesota Bureau of Criminal Apprehension Forensic Science Lab (BCA) in St. Paul, we are developing an expert system for evidence submission. A prototype for Controlled Substances submittal was uploaded on the Ames Lab server and reviewed by BCA evidence technicians and forensic scientists. Their feedback was used to make software modifications and to develop prototypes for all other BCA disciplines.

We have uploaded these prototypes on the Ames Lab server and BCA users are currently testing and evaluating them. As building blocks for these prototypes, the principal investigators used the methodology currently in place by the BCA for evidence submittal supplemented by

Training and Technology Transitions

The MFRC supported efforts by the Idaho State Police (represented by Matthew Gamette) and the Forensic Science Exchange (represented by Robert Weston of the Oklahoma State Bureau of Investigation) to webcast discussions of several issues current in forensic science.

- July 31, 2012: This Webinar discussed the Conversion to Fast GC/MS and Hydrogen Gas. The presenter was Charles Cornett PhD, University of Wisconsin-Platteville, and the host of the event was Matthew Gamette, Idaho State Police Forensic Services Division.
- September 7, 2012: This Webinar discussed the Application of Shape Measurement and Statistical Tools to Fingerprint and Footwear Evidence. The presenter was Dr. Mary Bush, SUNY Buffalo, and the host of the event was Matthew Gamette, Idaho State Police Forensic Services Division.
- September 25, 2012: This web roundtable discussed: Prosecution and Defense of DUI/D Cases, Juvenile Drug Court- What It Is and How It Works, Detection of Synthetic Cannabinoids in Blood Toxicology, Synthetic Cannabinoids- Routes of Synthesis and Emerging Trends, Drug Trends Seen in the Tulsa PD Lab, and Controlled Substances. The host of the event was Robert Weston, Oklahoma State Bureau of Investigation.

Technical Innovations in Management & Infrastructure (TIMI)

information received from BCA forensic scientists. Over the next month we will receive feedback from the BCA forensic scientists to make the adjustments necessary to develop the pre-final version of the Evidence Submission Expert System.

The BCA is currently locating law enforcement agencies interested in testing and evaluating the pre-final Evidence Submission Expert System version. Once tested and evaluated, we will make the necessary adjustments to finalize the Evidence Submission Expert System. We are currently preparing the various manuals and documents to facilitate installation, operation, and customization of the software at the BCA.

R & D Programs

We are preparing summaries for the three ongoing research projects and the five projects completed since issuance of the 2011 Research and Development Program Summary booklet. We plan to publish the booklet in November and distribute copies shortly thereafter. The following projects will be highlighted in the 2012 R&D Program Summary booklet:

- “Chemical Characterization of Emerging Designer Drugs” (Jeremiah Morris, Johnson County Sheriff’s Office Crime Lab). The project monitors and analyzes emerging designer drugs to provide forensic drug chemists with the analytical data necessary to identify synthetic cannabinoids and substituted cathinones.
- “Development of a New Model to Study Firearms Related Blood Spatter” (Michael Taylor, Institute of Environmental Science and Research and Kevin Winer, Kansas City Police Crime Lab). This project focuses on the design and construction of a physical model to simulate the formation of gunshot-related blood spatter to answer case-related questions.
- “Random Probability Match Procedure for Statistical Comparison of Mass Spectral Data” (Ruth Waddell-Smith, Michigan State University; Jack Hurd, Alaska Scientific Crime Detection Lab and Garth Glassburg, Northwestern Illinois Regional Crime Lab). This project targets the development of a method to determine the significance of associations in the comparison of evidence.
- “Rapid Arson Sample Analysis Using DART Mass Spectrometry” (John McClelland, U.S. DOE Ames Lab – Iowa State University; David Tebow, Minnesota Bureau of Criminal Apprehension, and David Linketter, Iowa Department of Public Safety). The project examines the use of a new ionization method to determine the composition of an arson sample without sample preparation and extraction steps. It establishes proof-of-concept.
- “Fast Gas Chromatography Capabilities in Drug Identification” (Chuck Cornett, University of Wisconsin-Platteville and Leah Macans, Wisconsin State Crime Laboratory-Milwaukee). This project examines the capabilities of Fast GC to improve the separation and detection of Scheduled Compounds. It also investigates the use of hydrogen instead of helium as the carrier gas of choice in drug analysis.
- “Degradation in Chromosomal DNA Assessed Using PCR Amplification and Capillary Electrophoresis” (Robert Allen, Oklahoma State University and Byron Smith, Tulsa Police Department Crime Lab). The project establishes parameters enabling Quantitative Template Amplification Technology assay to reliably identify DNA samples that are sufficiently degraded to require specialized testing methods to produce a DNA profile.
- “Shape Measurement Tools in Impression Evidence: A Statistical Approach” (Mary Bush, State University of New York-Buffalo; David Sheets, Canisius College and Glenn Langenburg, Minnesota Bureau of Criminal Apprehension). This project investigates the use of a shape change measurement technique called geometric morphometric analysis to explore the principal tenants of impression evidence.
- “Application of Multivariate Statistical Procedures in Fire Debris Analysis: Investigating Matrix Interference Effects and Weathering of Ignitable Liquids on Association of Ignitable Liquid Residues to Neat Ignitable Liquids” (Ruth Smith, Michigan State University and Troy Ernst, Michigan State Police). The project develops a methodology to associate ignitable liquid residues to the corresponding neat ignitable liquids in the presence of matrix interferences and weathering effects.

Projects highlighted provide a description of the innovative technology or new tool, the need the project addresses, its experimental design and methodology, partners and collaborators, as well as accomplishments made, benefits derived, and findings presented. A brief discussion of plans to continue the research project or to implement the new technology or tool is also included. If you are interested in receiving a copy of the 2012 booklet, please contact Rudi Luyendijk at 515-294-2931 or rluyendi@ameslab.gov.

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